

WATER TRANSPORTATION

— AND —

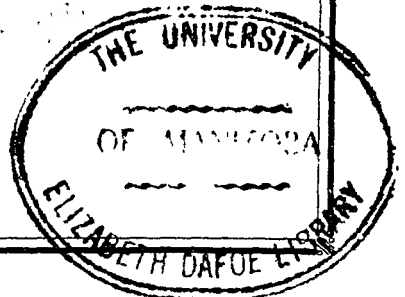
FREIGHT RATES.

— BY —

JAMES FISHER, M. P. P.

A Paper given at the Annual Meeting of the Manitoba Central
Farmers' Institute held in Brandon on July
17th, 18th and 19th, 1894.

BRANDON :
1894.



CN1006-

CN1006

WATER TRANSPORTATION

— AND —

FREIGHT RATES.

— BY —

JAMES FISHER, M. P. P.

A Paper given at the Annual Meeting of the Manitoba Central
Farmers' Institute held in Brandon on July
17th, 18th and 19th, 1894.

BRANDON :
1894.

RBR
HE
597
1894
1894

WATER TRANSPORTATION AND FREIGHT RATES.

BY JAMES FISHER, M. P. P.

MR. PRESIDENT, LADIES AND GENTLEMEN,—

The question as to how the disadvantage arising from the great cost of transportation may be overcome is one of transcendent importance to the farmers of Manitoba. The consideration of any and every possible means of reducing that cost may naturally be regarded, therefore, as one of the special functions of the Central Farmers' Institute at its annual meetings. In responding to the invitation to address you with which your executive have honored me, it is my purpose, with your kind leave, to present a few facts evidencing the effect of water transportation in the reduction of freight rates, and to offer some suggestions as to the means that may be available, whereby we may, to the greatest possible extent, take advantage of it.

In fulfilment of this purpose I will direct my remarks chiefly to a consideration of the remarkable results that have in the past been accomplished by improving and utilizing the great lakes and rivers that connect this country with the Atlantic, and to an indication of some of the greater results that may, I believe, be attained by a further improvement of these channels, as well as by opening a connection, if such indeed be feasible, between them and the prairies of Manitoba and the Northwest.

It is scarcely necessary for my purpose to dwell on the enormous extent of those great water stretches, leading all the way from the Atlantic to the head of the lakes. Suffice it to say that in no other country under the sun are found such immense bodies of fresh water, nor is there in any other inland country on the wide earth such a magnificent natural highway for the carriage of its products.

That our minds may be prepared to form some idea of their immense value for transportation purposes to the people of the American and Canadian Northwest, it is needful that we be reminded of the distance to which they stretch into the interior of this continent. Taking Duluth as the most westerly point on the great lakes and Belle Isle as the point

where we leave the ocean to enter the Gulf of St. Lawrence, we have the following distances :—

	Miles.
From Liverpool to Duluth.....	4,618
„ „ Belle Isle.....	2,134
„ Belle Isle to Duluth.....	2,284

So that the distance from the head of the lakes to the foot of the Gulf is greater by a hundred and fifty miles than that across the Atlantic to Liverpool. And for the whole of this immense stretch of nearly two thousand four hundred miles, with the exception of seventy-three miles, we have open, unimpeded navigation. Throughout that seventy-three miles natural obstructions had to be overcome by the construction of canals, as follows :—

	Miles.
The St. Lawrence system... ..	43 $\frac{3}{4}$
„ Welland Canal.....	26 $\frac{3}{4}$
„ Sault Ste Marie Canal.....	1
„ St. Clair Flats Channel.....	1 $\frac{1}{2}$

Before speaking of the immense volume of trade carried over these waters in recent years, it may be interesting just to refer to the rise and early history of that traffic. I need do no more, however, than recall a few dates. The first white man to enter the St. Lawrence was the great Frenchman, Jacques Cartier, in 1534. In 1608, Champlain landed at Quebec, and established a settlement there. Seven years later found the same intrepid adventurer as far west as Lake Huron. In 1641, two French missionaries made their way as far as St. Mary's Falls : and, seventeen years later, two French traders ventured on the ocean-like expanse of Lake Superior. Hitherto these voyages were made in canoes and batteaux. No sailing vessel had yet ventured on the great inland lakes. The first ship that spread its white wings to the breeze on these waters was a schooner of ten tons, built at Kingston, in Upper Canada, in 1678, by La Salle and Father Hennepin, in which they sailed over Lake Ontario and up to the foot of the great cataract on the Niagara river. Here they left their boat, and going on foot to a point above the falls, they built and launched, in 1679, the first vessel that ever floated on the waters of Lake Erie. In 1755, over seventy-five years after the first little craft was put on these waters, two vessels of sixty tons burden were put on Lake Ontario : and, coming

down fifty-five years later, in 1811, a schooner of the capacity of a hundred tons was built at Oswego, on that lake. An idea of the lake trade in these early days may be formed from the fact that, in the whole of the year 1816, the total tonnage carried on Lake Erie, including that handled at Detroit, was but 2,067 tons.

So, far, there were none but sailing vessels. But now a new power was to take the place of the breezes of heaven. In 1817, the first steamer that ever sailed the lakes—one of two hundred and forty tons burden—was placed on the waters of Ontario; and the very next year saw a steamer launched on Lake Erie. This vessel traded between Buffalo and Detroit, going down the Niagara river a little distance in her eastward trips. To make the return trip against the rather swift current of the stream, the steam power, with the primitive appliances then in use, was found insufficient, and resort was had to what was known as a "horned breeze." This was created by hitching oxen to the vessel, and they were made to pull her back through the current until she reached sufficiently near the smooth waters of the lake to be safely handled.

Down to the period we have now reached, the lake trade was practically confined to the lower waters of Erie and Ontario. It was not till the 12th July, 1834, just sixty years ago, and three hundred years after Cartier had made his pioneer trip up the St. Lawrence, that the first vessel from the lower ports reached Chicago. This was the "Illinois," of a hundred tons burden. As she sought to make her way from the lake into the Chicago river, she struck on a sand bar, and there being, I suppose, no oxen convenient wherewith to provide a "horned breeze" to assist her off, the whole population of the place, then a hundred in number, turned out and, with willing hands and a great cheer, triumphantly pulled the ship over the bar into the quiet waters of the stream. This was indeed the day of small things for Chicago, as well as for the lake traffic: but the same enterprise that was exhibited by the citizens of the budding city in lifting the steamer "Illinois" over the bar in 1834 has characterized them ever since, and has lifted the hamlet of that day to form the great city of this day, with its proud place in the world of trade and commerce, of enterprise and prosperity.

The first vessel—a fifty ton craft—to plough the waters of Lake Superior, by way at least of an extension of the lake trade in that direction, was launched in 1835, although before the end of the last century the Northwest Fur Trading

Company of Canada, and perhaps also the Hudson Bay Company, had little vessels sailing on this greatest of all the lakes. Indeed, Mr. T. C. Keefer, the eminent Canadian engineer, in a recent most interesting paper on the canals, tells us that, in 1798, there was completed a lock canal of three hundred feet long on the Canadian side of the Sault, a work, however, which was destroyed by the Americans in the war of 1812. In a few years after the extension of the lake trade to the waters of Lake Superior, in 1835, the mining operations on the south shore were opened, and a traffic speedily arose therefrom, which was greatly hampered, however, by the necessity of a transfer over the portage at St. Mary's Falls. For some years, indeed, one horse, with a cart, was able to carry over all the traffic. Then, for a time, a double team was employed; and, in 1850, the traffic became so great that a horse tramway was constructed across the portage.

In the meantime, an agitation had begun in favor of the construction of a canal at the Sault, among a people who had forgotten the very existence of the former one. At that time the Americans were alone interested in the promotion of such an enterprise: Canada was not "in it." Even among Americans there was by no means a general opinion that it was a prudent thing to put public money in what seemed so unlikelooking a scheme: and Mr. Henry Clay, one of the greatest and most far-seeing of American statesmen, attempted to cast ridicule upon the idea of conceding Federal aid for such a purpose by describing it as "a work beyond the remotest settlement in the United States, if not in the moon." But the enterprise received such encouragement that, in 1853, it was begun; and the year 1855 witnessed the opening of the canal, constructed and owned by the state of Michigan, at a cost of about a million dollars, out of the proceeds of a grant of land made by the Federal powers. This canal had a depth of twelve feet; and its opening at once gave a remarkable impetus to the mining and other industries of the great Northwest on the American side, and to the consequent trade of the lakes. The result was that, fifteen years later, the United States Government, having taken over the whole enterprise as a Federal work, made an appropriation for deepening it to seventeen feet. This improvement was completed in 1881. Again a new and extraordinary impetus was given to the industries and trade of the Northwest by the opening of the enlarged channel, so that in five years more the traffic had so far increased that Congress decided upon a further deepening, so as to give a clear twenty feet of water.

This work has been going on ever since, is now in progress, and is likely to be completed by the end of 1895.

That the opening up of the rich Northwest of the Americans has been greatly accelerated; that its mining, lumber and farming industries have been developed and its trade greatly increased as the direct result of the opening and deepening of the Sault canal and the improvements made in other parts of the channel cannot, of course, be doubted.

At the same time that this work was being carried out, so as to open a channel between Lakes Superior and Huron, a considerable expenditure was made—mainly by the American Government, but partly by Canada—to improve the navigation of the St. Clair and Detroit Rivers by dredging and by the construction of short canals, whereby a depth of at least eighteen feet has been obtained throughout their entire length. Further improvements are now in progress to deepen these channels to twenty feet, and by the end of the season of 1895 it is expected that a twenty foot channel will stretch without break from Duluth to Buffalo. Let us look for a moment at the effect of these improvements as respects traffic and rates.

In 1856, the year following that in which the Sault canal was opened at a depth of twelve feet, the tonnage passing through it was 101,458 tons. In 1870, it was 690,826 tons. In 1892, the year following the deepening of the channel to seventeen feet, it reached 2,029,521 tons.

	Tons.
In 1835 it was	3,256,628
„ 1890 „	9,041,213
„ 1892 „	11,214,333

A most striking evidence of the great increase in the traffic is furnished by a comparison of the values of the freight carried through this canal in the past few years.

In 1889 the value was	\$ 83,732,527
„ 1890 „	102,214,148
„ 1891 „	138,178,208
„ 1892 „	135,117,267
„ 1893 „	145,136,956

This traffic includes, of course, only the freight entering and clearing from ports on Lake Superior alone. It includes, however, Canadian as well as American freight.

So far I have spoken of the traffic of Lake Superior ports alone. Let us now take the traffic passing through the Detroit river—which includes, not only that of Lake Superior, but also that of Lakes Michigan and Huron—and let us see how it has increased in a few years. The figures I am now about to quote include American trade only, not Canadian. In 1889, the American traffic carried through the Detroit River was 19,717,860 tons: in 1890, it was 21,884,472; in 1892, it was 26,553, 819. The tonnage carried on all the lakes west of Buffalo in 1890 was 30,299,066 tons, and in 1892 it was over thirty-seven million tons. This far exceeds the total foreign tonnage entering and clearing at both London and Liverpool combined, and, indeed, almost equals the aggregate of both the foreign and coastwise trade of these great ports: and it exceeds the aggregate foreign tonnage handled at all the ocean ports of the United States put together.

By way of further illustrating the extent of this lake traffic, let us contrast the tonnage carried through the Sault canal with that carried through the Suez canal. The latter, be it remembered, is the channel through which the trade of great oceans and between vast continents is carried. It is open every day of the three hundred and sixty-five that form the year. The Sault, on the contrary, is open for only about two hundred and twenty-five days on the average, and it represents, as I have already said, nothing more than the trade to and from the ports on one only of our fresh water lakes. and yet, through the Suez was carried 6,890,004 tons in 1891; through the Sault, 9,041,213 tons: through the Detroit River, over 24,000,000 tons, including Canadian freight; while the aggregate over all the lakes was over 33,000,000 tons.

I will now give some figures by way of comparing freight rates by lake with those charged for rail carriage. The figures given, as well as nearly all the other figures presented in this paper, are quoted from official statistics, and on the question of rates they are taken from the official report of the Chief of the American Bureau of Statistics on the Internal Commerce of the United States, published in 1892, the last one to which I have had access. The figures relate chiefly to the years 1890 and 1891, but such examination as I have been able to make into the figures of 1892 and 1893 indicate that they convey the same lesson in even more striking terms.

For the purpose of conveniently comparing rail rates

with those charged for water transportation, the cost per mile per ton to the shipper is taken in each case.

The average rate by rail upon all the railroads in the United States was, in 1890, stated to be 9.22 mills per ton per mile. The average rate by water for all freight passing through the Sault canal that year was 1.3 mills per ton per mile, or a little less than one-seventh of the average cost by rail. The result is, as the report shows, that the total cost to the shippers of moving the nine millions and odd tons of freight carried through the canal that year was less than \$9,500,000. If, however, the rates charged had been equal to the average rates charged by rail, the total cost would have been \$65,000,000. This effected a saving in one year, as the report stated, of more than \$55,000,000 upon the freight of Lake Superior ports alone. The total traffic carried that year over all the lakes west of Buffalo was 30,290,000 tons. The report referred to points out that the average cost to the shipper over the lakes generally was a little less than the average of the cost on freight through the Sault. But, for comparison, the writer was content to assume that it was just the same as the Sault rate. The total cost of the lake freight at that rate was \$22,294,008. Had the rate charged been the same as the rate by rail, it would have been \$157,000,000. What do these figures show? I will give the answer in the words of the report itself, so that they may be accepted as carrying all the weight which the official position of the document gives it. "Upon this basis," says the writer, "the saving to the public by water transportation on the lakes, in a single year, was \$135,000,000, or four times the entire river and harbor expenditure of the United States on the great lakes from the foundation of the Government to date." It will be seen in this comparison that he took the figures less favorable to the cost of lake freight than the facts warranted, because the rate he took was really larger than the average. "It should be noticed also," proceeds the same report, "that this saving to the public is over and above the undoubted saving which has resulted from the effect on the rail freight rates produced by the competition of the water rates." Again he points out another respect in which he was not claiming the full advantage of water rates. Most of the lake traffic, and particularly coarse goods like grain, coal, &c., is handled at a rate lower than 1.3 mills per ton per mile. As the rate per ton per mile on the Canadian Pacific Railway for the year 1891 was 9.1 mills, it is manifest that the comparison is quite fair to the Canadian Pacific Railway Company.

The difference between the cost of moving freight by

water and that by land carriage can, perhaps, be still more strikingly realized when we take the cost in the carriage of certain articles. Our great staple in Manitoba is wheat, and the most disheartening fact in connection with wheat raising here is that about half the value of the grain in the ultimate market is taken to carry it there from our fields. The rate from Brandon to Fort William is at present 19 cents per 100 pounds, which is equal to 11.40 cents per bushel. The distance is 560 miles. From Chicago to Buffalo, 900 miles, the rate by lake is from 2 to 3 cents per bushel. In 1891 it was 1.9 cents, and it has been carried for as low a rate as 1 cent. From Duluth to Buffalo, 1,000 miles, it is usually between 3 and 4 cents per bushel, the average for some seasons being as low as 3 cents. From Duluth to Montreal by water, about 1,375 miles, the rate is from 6 to 7 cents when competition is keen. From Winnipeg to Montreal, 1,370 miles, it is about 27 cents. The average all rail route from Chicago to New York, in 1891, was 15 cents per bushel, while the average rate by lake and canal between the same points was less than 6 cents: and this although at Buffalo it had to be transferred to the small barges on the canal for carriage to New York. The rate per ton per mile on wheat now charged by the Canadian Pacific Railway Company from Brandon to Fort William, according to the Company's figures, is 6.8 mills, and from Winnipeg to Fort William 8 mills. The rate on wheat by the Sault canal from Lake Superior ports to Buffalo is 1.2 mills per ton per mile, and as against the rate of 11.40 cents per bushel from Brandon to Fort William, 560 miles, a rate of from 2½ to 3 cents per bushel is charged from Buffalo to New York by the Erie canal and Hudson River, a distance of about 500 miles. Take, again, the item of coal, of which we import so large a quantity to this Province. The rate from Fort William to Winnipeg, 426 miles, is \$3 per ton: from the Anthracite mines in the Rockies, about 900 miles, it is \$5: while from Buffalo to Duluth, 1,000 miles, it is from 30 to 40 cents per ton. In 1891, the average was 29 cents, and for part of the season it was actually as low as 10 cents per ton.

It is not difficult to account for the lower rates by water as compared with those by rail. In the first place, there is no monopoly on the water. It is Nature's own highway, and governments and parliaments have not yet assumed to give up its exclusive use to particular corporations or individuals. One water channel is better than a score of lines of railway, for the use of the channel is not limited to the use of scores of vessels or to a score of lines of vessels, but is open to all who are willing to compete. A great part of the traffic of the

lakes, as well as of the ocean, is carried by "trump" vessels, belonging to no particular line, going here and there, and in every direction where traffic is available. Then there is the cost of construction of railways. But for about two thousand three hundred miles of the two thousand three hundred and eighty-four of lake and river between the Atlantic and the head of the lakes not a dollar has been expended in providing us with the highway: not a cent has been paid out for repairs to the track, which never wears out.

Then there is the reduced expense attending shipment by water. This is owing in part to the great cargoes that are carried on the lake vessels. There are ships now on the lakes that, with a draught of sixteen feet of water, carry more than one hundred and twenty-five thousand bushels of grain in one load from the head of the lakes to Buffalo. It costs but little more to carry a hundred and twenty-five thousand bushels in a vessel of their capacity than it does to take fifty thousand bushels in a vessel built to carry that load. I understand that a car load of wheat takes about six hundred and fifty bushels. It would take about ten trains of twenty cars each to carry the load of wheat taken by one such a vessel. When our St. Lawrence canals shall have been deepened to the depth of fourteen feet, one of the whale-back steamers, with two barges in tow, can take in one load, from Port Arthur to Montreal, about a quarter of a million bushels, without breaking bulk. To take this by rail would require nearly twenty trains of twenty cars each. One of these steamers, with three barges in tow, has already carried about three hundred and twelve thousand bushels in one load down the lakes. That means a load equal to the capacity of twenty-four such trains. Many trains, of course, take much more than twenty cars of grain, but often they are less. A writer in a recent magazine says that the average load carried by freight trains in the United States is less than one hundred and eighty-two tons. Some of the new vessels on the upper lakes, with a draught of only sixteen feet, take in one cargo over three thousand seven hundred tons, equal to more than twenty such average trains: while the whale-back steamer, with her three consorts in tow, will, in one load, with one staff of hands, with one outfit of steam-power, with one set of machinery, with no wear and tear at all of the watery track, and with little wear and tear to the vessel, carry through the fourteen foot channel to Montreal, when completed, nearly nine thousand five hundred tons, or more than is carried by fifty of such average freight trains.

There is, then, a vast difference in expense in every

direction in favor of the water,—in equipment, labor, fuel, time, wear and tear, &c. Just take the one item of consumption of coal. Mr. S. A. Thompson, of Duluth, who knows more about this subject than anyone else in the Northwest, and whose figures are always given as the result of close study on his part, is quoted by Mr. T. C. Keefer as saying that the coal consumed by one of the modern vessels in the upper lakes is only an ounce per ton of freight carried per mile, and that the cost in that one item of carrying freight by water from Duluth to Buffalo—that is, the cost per ton per mile—is only one twenty-sixth part of the cost per ton per mile by rail.

Are we not, it may be asked, already reaping the benefit of this great reduction in rates afforded by the lake routes? To a large extent we are, indeed: but, unfortunately, we are by no means enjoying it to the full extent that we might. The figures that I have given you, so far, relate only to the traffic and the rates on the lakes west of Buffalo. The channel of seventeen to eighteen feet of water over which all this traffic is carried extends only from the head of Lake Superior to the foot of Lake Erie. Below that the larger vessels of the lakes cannot pass. True, we have the Welland canal reaching thence to Lake Ontario, and the St. Lawrence River, with its canals, stretching to Montreal and the Atlantic. Unfortunately, they are of much smaller capacity than the upper channels. It happens that a complete revolution has taken place within recent years in the character of lake shipping which had not been anticipated when Canada decided to deepen her canals. Twenty-five years ago the best authorities on shipping considered that no larger vessels than such as would carry say twenty thousand bushels of wheat, or about six hundred tons of ordinary freight, would ever come into general use on the lakes. Before that time, the Welland had been increased from its original depth of eight feet to ten and a-half feet, while the St. Lawrence canals—some of which had, at first, a depth of thirty inches and some four and four and a-half feet—had many years before that been enlarged so as to have a uniform depth of nine feet. About 1870, an agitation began in favor of an increased depth, because of the then increased traffic of the lakes and of the proposal of the American Government to deepen the Sault. A depth of twelve feet all through was at first decided on. The intention, indeed, was to make the canals of a capacity sufficient to float the largest class of lake vessels that would engage in the through lake traffic. For this purpose it was then thought sufficient to have a twelve foot channel, with locks two hundred and seventy

feet long, with a width of forty-five feet. The work of bringing the canals to this capacity was at once proceeded with: but, in 1875, there was already evidence that the proposed depth of twelve feet would be insufficient, and it was decided to deepen them to fourteen feet. This work, then, began in 1871, has not to this day been completed, and we still are without a greater depth than nine feet in a part of the St. Lawrence system, although, since 1888, the Welland has had a depth of fourteen feet. Most unfortunately, when it was determined to make the depth fourteen feet instead of twelve, no change was made in the length or width of the locks, which still remain at two hundred and seventy feet by forty-five feet for the fourteen foot channel. All the bigger vessels now in use on the lakes are three hundred feet long and over, and cannot, even with a part of a load, pass east of Buffalo: and cannot, therefore, pass the St. Lawrence, even when the fourteen foot channel shall have been completed. I understand that through the Welland, with its fourteen feet of water and its present lock capacity, the largest load that can be taken by an ordinary vessel is about one thousand eight hundred and twenty-five tons, or a little over sixty thousand bushels of wheat: while the St. Lawrence locks will not admit vessels of the ordinary patterns carrying more than about five hundred tons, or about sixteen thousand bushels. There are now in the upper lakes more than two hundred vessels with a capacity of two thousand tons and more each, while the average capacity of the larger ones lately built is three thousand two hundred tons. Even as long ago as 1889 there were nearly three hundred and fifty vessels plying on the upper lakes that could not, when loaded, pass through the Welland. When a twenty foot channel will be completed, as it will be by 1896, from Duluth to Buffalo, the capacity of the lake vessels will of course be greatly increased. We shall then find loads of from six thousand to seven thousand five hundred tons carried in one vessel to the foot of Lake Erie: and the Welland and St. Lawrence route will fall far shorter than ever of being able to accommodate the traffic.

Looking at the difference between the capacity of the Canadian channels and those on this side of Buffalo, it is not surprising that, while the traffic through the Sault canal in 1892 was eleven million two hundred and fourteen thousand three hundred and thirty-three tons, that passing through the Welland during the same season was but nine hundred and forty-four thousand seven hundred and fifty-three tons, and through the St. Lawrence canals nine hundred and thirty-six

thousand seven hundred and ninety-four tons. The fact is, that the greater part of the traffic that goes down the lakes on its way to the seaboard, even that intended for the Liverpool market, is diverted from the natural and shorter channel by the lake and river route, and is carried either by rail or by the Erie canal to New York. And speaking of the Erie canal, we have in this work, apart from its importance as a competitor with the Canadian route, a remarkable instance of the effect of a water way in reducing rates. Opened originally, in 1825, at a depth of four feet, it was enlarged, in 1862, to a seven foot depth, the total cost for all being about \$51,000,000. This entire cost was repaid to the State many years ago out of the tolls, since which time it has been free and maintained at the expense of the State. It has a length of about three hundred and fifty miles to Albany; from which the little barges which carry no more than about two hundred and forty tons, or eight thousand bushels of grain, are towed to New York over the Hudson River. It takes about one month for the round trip from Buffalo to New York and return, the average rate of speed being no more than about three miles an hour, and the barges are usually drawn by horses. With all these disadvantages, the canal has secured an enormous traffic in past years, and has been a wonderful factor in settling freight rates by rail, the greater part of the traffic being taken by the railroads, but of course because of reducing their rates. The distance from Buffalo to New York by this route is about five hundred miles. The rate for wheat in recent years has been, as already stated, from 2·5 to 3 cents per bushel, including elevator charges. In 1890, the scheduled railway rate on wheat from Buffalo to New York, up to the opening of the canal, was 7·8 cents. During the period the canal was opened the average actual rate charged by the railways that season was 3·75 cents less than the scheduled rates. The quantity of wheat carried to New York that season by rail and canal, according to an appendix to the report mentioned, was about one hundred and ten million bushels, of which about eighty millions went by rail and thirty millions by canal. The water way cheapened the rate on what was carried by rail as well as that taken by water. Taking the saving in the rate on the entire transportation as 3·75 cents per bushel, there was a saving on the wheat alone carried into New York for that one season of about \$4,000,000. In 1893, the quantity of grain carried to New York was about one hundred and sixty-eight million bushels, of which about one hundred and thirty-eight million bushels went by rail. The saving for that season, calculated upon the same rate of

reduction, would amount to more than \$6,000,000. Not a bad record for the old Erie ditch, with its seven feet of water.

A most important factor in leading to the low rates I have quoted has been, as already suggested, the increased size of lake vessels and the consequent enlargement in their cargoes. It is only, indeed, since, and because, the larger vessels have come into use that the very low rates named have been reached. In 1887, the average rate per ton per mile on the lakes was 2·3 mills; in 1891, it was 1·3. In 1871, the average rate on wheat by lake and canal from Chicago to New York was over 17 cents a bushel; in 1880, it was 13·13 cents; and in 1891, it was less than 6 cents. In 1880, the average rate by lake from Chicago to Buffalo on wheat was 5·7 cents per bushel; in 1890, it was 1·9 cents. In 1887, the average rate on wheat from Duluth to Buffalo was 6·6 cents per bushel; in 1890, it was 3 cents. In 1887, the average rate on coal from Duluth to Chicago was \$1.05 per ton; in 1891, it was 56 cents. In 1887, the average rate on coal from Buffalo to Duluth was 70 cents; in 1891, it was 29 cents.

If such results have been largely brought about by increased depth in the channels west of Buffalo and the consequent increase in the size of vessels, what would be the position to-day if we had the seventeen foot channel of the upper lakes extended to Montreal? And what if, in 1896, when the upper channels will have a depth of twenty feet deep, we were to have them extended to Montreal at the same depth? It is impossible for us to conceive the extent of the reduction in freight rates that would follow. But we have not now before us any such a scheme as the deepening of our canals to twenty feet, or even seventeen. The present aim of the Canadian Government is the much more modest one of a fourteen foot channel. We have, for nearly a quarter of a century, been working away at it, and the best promise we can get to-day from the Government is that they hope to have it completed in the spring of 1897. Let us, too, hope that it may be so. Had a fraction of the energy been applied to this work that was devoted to the construction of the Canadian Pacific Railway, we would have had it completed ten years ago. Had even the extra effort—so effectually and yet so needlessly, as I think—made to hasten the completion of the Canadian canal at the Sault been given to push on the works on the St. Lawrence, we would not still be awaiting its completion. But though we may not hope, in the near future, for an ocean service to Port Arthur and Duluth, let us not be discouraged. From the completion of even the fourteen foot channel, in

1897, we have a right very confidently to anticipate a great reduction in rates. Though the old style of vessels cannot take more than about one thousand eight hundred and twenty-five tons through our new channels when completed, happily the whale-back vessels are constructed for carrying larger cargoes. I have already given some figures showing the great load they can then carry to Montreal. Of their present lake fleet of about thirty vessels, I understand that at least one-half have been constructed with a special view to the Welland and St. Lawrence traffic. The steamers of that class can carry about seventy-five thousand bushels, and the tow barges about eighty-five thousand.

I have said that we have no immediate prospect of a further deepening of these channels. The question of having the deeper water way of the upper lakes continued to the seaboard is a question I will not to-night discuss at any length. To do so would be beyond the compass of this paper. I may be permitted to remark, however, that while such a work is beyond the financial ability of Canada just now, I have a hope that, ere very long, public men on both sides of the boundary may see the propriety of taking it up as an international scheme. In a paper that I wrote on this subject nearly three years ago, I ventured to suggest some of the reasons that led me to see in such a proposition the best and most reasonable scheme for solving the problem of transportation for the Northwest. I am glad to notice that public opinion in Canada is beginning to assert itself in that direction. At the International Reciprocity Conventions held in Grand Forks and St. Paul, in 1892 and 1893, evidence was not wanting that many of the people of the American northwest looked on such a scheme with much favor.

After all, the St. Lawrence route is the natural channel to reach the sea for the traffic of the entire lake region and the immense country to the Northwest that is tributary to the lakes. It is not satisfactory, either to Americans or to Canadians, that the conditions for taking the traffic via the Canadian canals are such as to force the bulk of the whole northwest trade, including the wheat of Manitoba, over the New York railways or the Erie canal in preference to the St. Lawrence. The Canadian route is certainly the shorter one for the people on both sides. From Buffalo to Montreal by lake and canal is three hundred and seventy-five miles, of which seventy-one is canal, with a depth—soon to be—of fourteen feet. From Buffalo to New York by the Erie canal and Hudson River is five hundred miles, of which three hundred and fifty is canal, with only a seven foot channel. A channel of fourteen feet,

it is said, will carry a vessel of about eight times the capacity of the largest vessel that a seven foot channel will bear. In the same connection I may add that in a channel with twenty feet of water a vessel will float with a cargo of nearly three times the size of the largest load that can be taken in a fourteen foot channel. In other words, a twenty foot channel in the Welland and St. Lawrence would admit vessels carrying cargoes nearly twenty-four times the size of the greatest loads that can be taken on an Erie canal boat.

Then the distance from Montreal to Liverpool is shorter by over two hundred and sixty miles than the distance from New York to Liverpool. Mr. T. C. Keefer, from whom I have already quoted, speaking several years ago on this subject, thus referred to this fact:—"If a thread be stretched upon a globe from any point in the British Channel to Toledo, Ohio, and arranged so as to be upon the shortest line, it will be found that the St. Lawrence does not deviate at any point more than thirty miles, connecting in the shortest possible distance, with the most capacious, steady, and economic mode of communication, the greatest food-consuming and the greatest food-producing countries in the world—England and America—inhabited by the parent and offspring of the most favored race of men.

Evidence that the scheme is not without support even in the United States Congress is found in the report of the Committee on Inter-State and Foreign Commerce, presented to the House of Representatives in February, 1892, recommending the passage of a resolution introduced by Mr. Lind, of Minnesota. In this resolution it was actually proposed that the President of the United States should "invite negotiations with the Government of Canada to secure the speedy improvement of the Welland and St. Lawrence canals, so as to make them conform in depth and navigability, so far as practicable, to the standard adopted by the Government of the United States for the waters connecting the great lakes." That is, twenty feet. The report of the committee, after declaring that "the great lakes furnish a highway for commerce that has no parallel in any other country," and that "the impracticability of deepening or improving the Erie canal so as to admit the passage of ocean going vessels seems to be admitted on all sides," went on to draw the attention of Congress to the fact that "if the Welland and St. Lawrence canals were deepened, so as to correspond with the twenty feet of the new Sault canal, all the cities of the lakes would enjoy the advantages of seaboard cities."

I ought to add, by way of still further evidence of American opinion in the matter, that the resolution just spoken of was, in the first instance, referred, for his opinion, to Colonel Orlando E. Poe, chief engineer of the American Sault canal, the highest American authority, perhaps, on the question, and Colonel Poe's response was in these terms:—

"The Welland and St. Lawrence canals undoubtedly occupy the most favorable, and therefore the best, line of water communication between the lakes and the ocean. A deep waterway can be opened by their route at less cost than by any other, and there can be no question as to its advantage in an engineering point of view. So far as communication between the lakes and the countries beyond the Atlantic is concerned, every argument favors the proposition of this Bill."

More striking and valuable testimony to the superiority of the St. Lawrence route than I have quoted from men of the reputation of Mr. Keefer and Colonel Poe it would be difficult to conceive. I know that the enterprising proprietors of the whale-back vessels that now carry so much of the commerce of the lakes have exactly the same opinions as to the advantage of the international channel over any other route.

There is another consideration affecting the question of deepening the international channel that is not to be lost sight of. Opinion on the American side is so strongly in favor of a twenty foot channel to the coast that failing to secure it by the Welland and St. Lawrence, they are bound to have it through their own territory. Indeed, active steps have been in progress towards that end for some years. Our neighbors are not satisfied with anything short of a channel all the way through that will accommodate ocean vessels. About ninety-five per cent. of the ocean traffic is to-day carried in vessels drawing no more than twenty feet, so that the continuation, to the sea, of a channel of the depth which they now practically have west of Buffalo will give them what they desire. The best opinion among shippers and engineers on the American side is in favor of the St. Lawrence, but there are many, of course, who try to rouse the national pride against a partnership with Canada in the international route. Every expression of a Jingo sentiment on our side strengthens that feeling on the American side. The result may be that, if we do not soon move in the matter and seek the co-operation of our neighbors in improving the natural waterway, that we shall see a completed channel of twenty feet through American soil, which they may open

to us or not, as they please, and on such terms as they please. This being brought about, the St. Lawrence and Welland channels will be practically closed to the traffic of the Northwest, Montreal will no longer be on the highway of Canadian trade, and the fifty-five millions of dollars we shall have expended on the route will have been largely thrown away.

One of the disadvantages of the St. Lawrence route which in the meantime leads to the preference of the lines to New York, is the extra time and expense involved in handling the grain when taken via the St. Lawrence. At Buffalo there is the most perfect machinery for handling it. With an elevator capacity of over fifteen million bushels, they have appliances whereby one elevator will transfer twenty-five thousand bushels of wheat from a vessel in one hour. One elevator has transferred three hundred thousand bushels in twenty-four hours, besides allowing time for all the movements of vessels required for the purpose. When placed on the cars or canal at Buffalo, no further transfer of cargo has to be made until it reaches New York. On the St. Lawrence route there is no such machinery for speedy and cheap handling of grain. On reaching Kingston, cargoes have to be transferred to canal barges, and no proper floating elevators or appliances for the purpose are provided. Such means as are available are said to be in the hands of one company, whereby I understand that a practical monopoly of the large traffic exists on the river. This can only be wholly done away with when lake vessels like the whale-backs will pass through with unbroken cargoes to Montreal, without resort to the canal barges. Again, at Montreal, there are no proper appliances for speedy and cheap transfer of cargoes to ocean freighters. The conditions at that point will be much more favorable when the great loads of seven or eight thousand tons can be brought at once alongside the ocean vessel, instead of a delay from day to day for the arrival of the small barges with their little loads. But it needs that better machinery shall be applied, even then, for transferring the cargoes. No doubt it may be left to the enterprise and foresight of the trade authorities of the great commercial capital of Canada, whose future depends so much on the maintenance of this route, to see to it that the very serious defects in the existing state of things are removed.

Referring to the question of a deepening of the channels to twenty feet, I have noticed that the cost of such an undertaking is said to place it beyond the border of possibility. I have seen \$130,000,000 spoken of as the probable cost. But I find that Mr. E. L. Corthell, a very noted engineer who is

very familiar with the route, and who has written a most interesting paper on the subject, is of opinion that about \$52,000,000 would complete the whole work. I have seen letters from two other eminent engineers—one a Canadian and the other an American—who, while disclaiming having any such knowledge as would enable them to form a probable estimate, yet suggest a sum equal to that already expended as the sum we may reasonably expect to pay for securing the additional depth. This total expenditure, by the time the work is completed, will be not less than \$55,000,000. Mr. Keefer makes a suggestion with respect to an enlargement of the canals which would bring excellent results, though by no means so valuable as a deepening of the channels, but at a much less cost. That is, to lengthen the present locks, without either widening them or deepening the channels. The effect of this would be that many of the larger vessels of the lakes would be enabled to pass down to Montreal, taking lighter loads from the foot of Lake Erie. In his own words, "When this is done, nearly every lake craft now afloat could pass out to sea with fourteen feet draught, and load down to twenty at Montreal." In any event, the cost would be great, and I am not urging that Canada alone should undertake it at present.

Our Government and Parliament at Ottawa seem to be of the opinion, however, that Canada has heaps of money for expenditure on all kinds of undertakings, no matter how remote from our land or how useless for our purposes. Fancy paying a subsidy of \$125,000 a year to secure twelve trips of a steamer from Vancouver to Australia and back, to help bring traffic to the Canadian Pacific Railway, for carriage over its main line passing through the United States! Fancy paying \$75,000 a year to secure a few trips being made from Vancouver to Japan for the same purpose! We appear to have lots of gold to aid both these enterprises, although the Pacific Ocean is already white with the sails of commerce. And if Canada had no money to provide for the proper improvement of our natural highways to the Atlantic, how can we seriously talk of spending \$750,000 a year—equal to the interest, at three per cent., on twenty-five millions of dollars—to secure a faster service on the Atlantic, the only object of which can be to save a few hours in the transmission of the mails and to secure to the Canadian Pacific Road a larger share of the Australian trade.

Sir William Van Horne, the distinguished President of the Canadian Pacific Railway Company—who is, of course, an earnest advocate of the fast Atlantic scheme—in discussing it

the other day, is reported to have said that "an Atlantic steamship service of the highest class is the very greatest need of the country. . . . It should be provided at any cost. . . . It should be all that money can make it." Well, it would not have occurred to anyone in Manitoba that a better steamship service on the Atlantic is Canada's greatest need to-day. It is certainly not Manitoba's greatest need. The present steamship service on the great ocean is good enough for us and if it is not good enough it must be because the trade is not sufficient to keep it up. Let us once have cheap transportation to the ocean, and that being accomplished, and the traffic on the Atlantic thereby increased, as it will be, we will find that there is enterprise enough in the world to produce a sufficient service on the Atlantic.

Why should we not leave the commerce of the ocean, which is not hampered by any conditions or restrictions, to the ordinary laws of supply and demand? Is it really necessary for Canada to spend millions to enable vessels to use this waterway which has never cost a dollar? Do our neighbors to the south spend their money in such a fashion? Such examination as I have been able to make into their affairs does not disclose the payment of any such subsidies. True, their commercial marine may not be the greatest on the ocean, but there is never lacking means for the transport of their products. Even if we should have, at the country's expense, a line of steamships that in speed will whip all creation, is it worth having it at such a cost, so far as any substantial advantage to the country is concerned?

Sir William speaks of our great canal enterprise as being already completed, and as if we did not need to touch another spade for its further improvement. "I look upon it," he says, "as a necessary and natural supplement to the enormous expenditure Canada has made for the development of her railways and canals." I may be permitted to suggest that I think it time enough to supplement our expenditure on the canals by the spending of millions more for improving ocean shipping when we shall have so improved our own channels to the ocean that the shipping of the lakes may pass through them. In other words, let us procure the means of transportation from our own markets to the ocean, on reasonable conditions, before we pay out millions in improving the means of transit on the ocean itself, especially when the grant is to be nothing more than a subsidy to enable one particular line to compete with special advantage over others on the free waters of the Atlantic and Pacific.

The truth is that while the route from Britain to Australia has the advantage in distance over the Eastern line, it has the disadvantage of involving two transshipments of cargoes on the way,—at the two ends of the Canadian Pacific Railway line. This is such a serious drawback as to be decisive under ordinary conditions against its success. And so Canada, which has practically very little interest in the scheme, is asked to pay all the money to overcome this disadvantage; and the Canadian Parliament, Manitoba members included, find no difficulty in voting it. We may expect in a few years to see the great project of a canal across the narrows of this continent at Nicaragua completed, and a waterway for ocean vessels established between the Atlantic and Pacific. What, then, will come of the Canadian route to Australia, with its two transshipments and three thousand miles of railway? Well, of course, it can then be bonused at a higher rate. Even now, to encourage trade between Australia and Vancouver, besides the \$10,000 a trip given by the Dominion, the Canadian Pacific Railway Company carries at present all the Australian freight across the continent at actual cost, the handsome dividends it makes out of the Canadian trade and the financial standing the Canadian subsidies have given it enabling it easily so to do.

Even if these unjustifiable grants for the Atlantic and Pacific service were not made, I am not here to contend that Canada is in a position now to undertake the deepening of the canals to twenty feet. But I hope the question will not be allowed to rest, and that not many years will pass before the two nations will unite in doing the work. And when the objection is made that the cost is too heavy, and when a sum like \$130,000,000 is mentioned as the possible cost, even though we may not believe it will cost anything near one-half of that, let us not forget that in about two hundred and twenty days of every year a greater sum than even that is saved on the cost of carrying that portion of the American traffic of the upper lake region that is carried by water, without including the many millions more that are saved in the freight carried by rail because of the reduced rates caused by the competition of the waterway.

On the question of an international scheme for the deepening of the canals, it is suggested that the Americans would never think of spending a dollar on a public work in a foreign country. Why not? Did the consideration of its being a foreign country deter our enterprising neighbors from taking up the Nicaragua canal scheme? Did not the American Government undertake and pay for the survey of

the route as a national enterprise? And did not the American Congress organize and charter a company for the purpose of constructing the work? Did not Britain feel free to take a like interest in that enterprise, without allowing the fact of its being in a foreign country to deter her from so doing? Why, the enterprise I speak of was deemed of so much importance that Great Britain and the United States, realizing that the capital to build it must come from their Governments or citizens, actually entered into a solemn treaty to protect that capital. One clause of the treaty provided that these two nations bound themselves to each other to "guarantee the neutrality of the canal, so that it may forever be open and free and the capital invested in it secure." If I am not mistaken, some of the American money already expended to improve this very waterway of our own, in the Detroit River, has been expended on Canadian soil, and certainly both nations have joined in deepening the Detroit channel. Of course it would not be expected that the United States would expend money on the Welland and St. Lawrence canals simply as a Canadian enterprise. But, as an international enterprise—as an improvement of the common highway, for the benefit of both countries—why should they not? Provided always that the canals were recognised, as they by treaty are, to be open to the enjoyment of citizens of both countries on equal terms: and provided that the management and control of them were put in the hands of a joint commission appointed by both countries.

I will close what I have to say on this phase of the question by the following quotation from the paper I wrote on the subject in 1891:—"From the head of Lake Superior to the mouth of the St. Lawrence, the lake and river route forms a common highway for the United States and Canada, in which neither side has any greater right as to enjoyment than the other. It so happens that at some points on the rivers forming this common highway there are some serious obstructions to navigation. Even in some of the lakes navigation is interfered with by natural hindrances, and cannot be made perfect without the expenditure of a sum of money. How should money for such a purpose be provided? It is to be used in improving a joint highway between two friendly nations, the use of which is common to both of them. Surely it would seem reasonable that it should be furnished by both nations. . . . As it is quite impossible to make the Niagara navigable, no other course was left open to the owners of the 'highway' than to divert it for a short distance, so as to avoid a rock they could not remove. . . .

The only way that could be accomplished was by opening around the obstruction a canal on which vessels could be floated. Such a canal must, of course, be within the territory of one or other of the nations owning the highway. It happens that the work could be more conveniently done on the Canadian than on the American side. The Welland canal was built, therefore, through the Niagara peninsula, to avoid the falls and rapids of the Niagara River. But it was built at the expense of Canada alone,—an expense that to this date has reached nearly twenty-five millions of dollars. Citizens of the United States have the same benefit from it that Canadians have, and pay no greater tolls. I know not why this canal might not have been constructed and maintained at the expense, and as the property, of the two nations, instead of one. I am looking at it simply as a diverting, for that distance, of the joint and common highway. Americans certainly do not object to use it because it is on Canadian soil. I see no reason why Canada should object to the enterprise being carried out through her soil as a joint enterprise, seeing it was for her manifest advantage to have it on her soil, and that she was willing to let American citizens have its use in common with her own, after she spent so much money in building it. Can there, then, be anything objectionable in the United States, jointly with Canada, owning and maintaining a canal that they both use and that is built simply in the way of diverting their joint highway, and that simply on the ground that it passes through Canadian soil? . . . I repeat that I am unable to discover any sufficient reason why the two nations should not jointly own and operate these canals. I see no disadvantage, practical or sentimental, to arise from such a scheme. I see many advantages to both countries from the joint possession. I can imagine nothing more likely to promote the establishment of that 'lasting peace and friendship' between the two countries that was aimed at in the treaty of 1782 than the full and common 'enjoyment of the reciprocal advantages and mutual conveniences' that are open to both nations, in the shape of the unequalled water stretches that are common to both, extending from the 'Soo' to the sea, and including the artificial channels cut by the side of Niagara and St. Lawrence, in order to avoid the rapids of the one and the cataract of the other."

And, now, will you suffer a word or two more by way of suggesting the enquiry whether any feasible means may be found of turning this great international water way to better advantage for the benefit of the prairie country that we occupy? Is it at all feasible by utilizing some of the

natural channels of our own Northwest, by improving some of them, and by opening artificial ones, to have direct water communication from our country to the lakes or to the ocean? You are all painfully conscious that, as things are now, the only means of transportation to the lakes is at the cost of rates which, even though they be not—as some think—altogether unreasonable, are, at all events, many times over a multiple of what the cost would be by water. Unless, therefore, we know at the outstart that a waterway to the lakes or the ocean for all or a great part of the distance is a practical impossibility, the question is a most important one. We had a hope, at one time, that deliverance would come to us by securing a competing line of railway. Against great odds and powerful influence we fought for years for the right to build another road. We were even ready to fight for it, almost, with the musket, so intense was the feeling in the Province. In the end, we won. The right was conceded, and the railway was secured. I suppose no one will to-day say that our expectations have been in any substantial measure realised. We looked for real, active, keen competition. The most enthusiastic believer in the scheme will not to-day say that we have it, or that it has given the relief we expected. It is interesting to recal how confidently we were once looking to Mr. Oakes and a certain letter he had written. He was to be our deliverer when we arranged with his company that they take the control of the new road. Well, Mr. Oakes was giving evidence, the other day, in the courts of his country, as the newspapers tell us, and he told the Court very candidly why his company had bought our road. It was not, however, with a view to establish competition with the Canadian Pacific, as we supposed. It was just the reverse, as he now tells us. It was in order to put an end to competition. We thought the purpose was to lower rates: Mr. Oakes frankly tells us to-day that the object really was to keep up the rates. But let him tell his own story, as the papers report his evidence:—"The Northern Pacific and Manitoba Branch was bought because of the powerful competition of the Canadian Pacific, which, unhampered by an Inter-State Commerce Law, was slashing rates in a terrible manner. The acquisition of the Manitoba branch gave the Northern Pacific an entrance to Winnipeg, and forced the Canadian Pacific to maintain rates. But for the acquisition of this branch, Mr. Oakes said he believed the Northern Pacific would annually have to pay the Canadian Pacific \$500,000 to maintain rates, as was done by the Transcontinental Railway Association."

I am not here to criticise, much less to reflect upon, the

actions of any of our public men in connection with this transaction. I simply wish to suggest the lesson it teaches us,—that it is difficult to create, much more difficult to maintain, active, honest competition between lines of railway, and especially it is so where the lines are competitors in other districts, whose trade is of more importance to the competing lines.

If we had water communication, however, we know that it would be worth more to us than half-a-dozen lines of railway, even if it were but a four foot channel like the Rideau and as the Erie canal was for nearly forty years. What evidence have we that such a means of transportation can be secured, at a cost that makes its construction practically possible? It must be confessed that the information we have in this direction is of a very indefinite character, either favorable or unfavorable. Yet a few thoughtful men have given more or less of attention to the question. Ten years ago, when the agitation in favor of constructing a railway to Hudson's Bay was at its height, Colonel T. C. Scoble, of Winnipeg, a practical engineer of wide experience, and with a personal knowledge of the country excelled by very few, declared his opinion that a waterway to that Bay was feasible at a much smaller cost than a railway. In the first place, by improving the Red River at St. Andrew's, we have a clear stretch of water for over three hundred miles, from the City of Winnipeg to the foot of Lake Winnipeg. From that point, Colonel Scoble would follow the Nelson River for about two hundred and fifty-five miles, in which distance inland canals would have to be constructed, as he states, for twenty-eight miles. Another canal of fifteen miles would lead from the Nelson valley to a lake, from which flows the Little Churchill River, a distance of one hundred and seventy-two miles, to the Great Churchill, which latter runs from the junction one hundred and five miles more to the Bay. The whole distance from Winnipeg to Hudson's Bay by this route is said to be eight hundred and forty-four miles, and which, apart from works that would have to be constructed to avoid rapids, forty-three miles are inland canal.

For ten years past nothing further had been heard of a water channel to the Bay, until about two years ago, when Major H. N. Ruttan, City Engineer of Winnipeg, a gentleman, too, of wide experience and great knowledge of the country, published a most interesting paper showing the feasibility, as he contends, of a channel following most of the way the Hays River, sometimes known as a branch of the Nelson. This route, according to Major Ruttan, needs scarcely any

canal in the way of leading from one body of water to another, as there is a continuous stream all the way. Of course much heavy work would be involved in the way of improving the channel and making canals around rapids, but Major Ruttan confidently asserts that the scheme is feasible, and at a reasonable cost. Renewed interest is given to Major Ruttan's paper at this time through a recent letter from Dr. Orton, ex-M.P., addressed to the newspapers. That, again, has led to the resurrecting by Colonel Scobel of his own proposal of ten years ago of the Churchill route. Whether either of these schemes is practicable it is quite impossible at present to say. It is, at all events, a matter worthy of consideration and enquiry. It is to be borne in mind that any estimates that may be now suggested of probable cost must be based on altogether insufficient data. No actual survey has been made of any part of either route. The fact that there is a channel throughout the whole or any particular part of the distance, either way, is of little consequence until we know from instrumental surveys the probable cost of making the channel itself navigable. Many miles of the channel may be of the character of the St. Lawrence rapids, or those at Sault St. Marie, which have involved the expenditure of so many millions to overcome them. The public are indebted to the gentlemen named, who have gone to no little trouble in their investigations, for drawing attention to the proposed routes, and it is to be hoped it may lead to a further consideration of the question. But unless and until an actual survey shall be made, the question of a water route to the Hudson's Bay cannot be considered a living one. That any Government would grant an estimate for even a survey of the route is more than doubtful under present circumstances.

What evidence have we of the feasibility of obtaining a channel connecting the Red River with Lake Superior? Twelve years ago, or more, this question was being agitated among our neighbors in Minnesota and Dakota. It is said, indeed, that a preliminary survey was made for a channel then contemplated. The route was by the Red Lake River and Red Lake, from Grand Forks easterly. From Red Lake connection was proposed to be made with some of the lakes and streams forming the head waters of the Mississippi. From these latter, connection was to be made by canal with the St. Louis River, which runs into Lake Superior at Duluth. Whether any definite estimate was made of the cost of a channel in this direction, I know not. At all events, nothing came of it, although in recent years the question has been once more discussed, and was one of the subjects brought

before the Grand Forks Reciprocity Convention in 1892.

It is the opinion of not a few who have given the question some consideration that a more feasible scheme for connecting the Red River with Lake Superior is by way of the Lake of the Woods. And the number is greater who have faith in the possibility, as well as the advantage, of a canal to the Lake of the Woods itself, even if it should be impossible to continue it to Lake Superior. Over a year ago, the gentlemen who are now promoting the construction of the Manitoba South-Eastern Railway, to Buffalo Bay on the Lake of the Woods, obtained a charter to construct a canal from that lake to Red River. I do not understand that they had made such surveys or examination of the country as enabled them to decide on any particular route. They had simply made such a general examination of the country as satisfied them that such a channel was feasible. One proposal was to use the channel of the Rosseau River, whose head waters are within twenty miles of Buffalo Bay. For more than that distance the land is said to be very level—chiefly muskegs—the height of land rising, according to some accounts, not more than ten or twelve feet above the waters of the lake, although more recent testimony indicates that it is about twenty feet. It is said that a channel can be opened to the head waters of the Rosseau at little cost, the country being pretty free from rocks. Mr. Lonsdale, of Headingly, who a number of years ago passed over that country a great deal, tells us that in three successive seasons he paddled his canoe by this route from Buffalo Bay to Red River, without making a single portage. The fall from the Lake of the Woods to the Red River near Dominion City is about two hundred and sixty feet. As the Rosseau, for a great part of its course, passes through Minnesota, the opening of a channel by that route would be an international question. That, however, instead of being an objection, might be an advantage, as it might help to solve the very question that is agitating the minds of our neighbors in Minnesota and North Dakota.

Another route, one strongly favored by some men who have been over the country, and particularly, I understand, by those who hold the charter referred to, is from Buffalo Bay through Manitoba, to the head waters of the Seine, which runs into the Red River at St. Boniface. Still another is to connect Buffalo Bay in the same way with Red River, entering the Red River near St. Agathe. As in the case of the Rosseau route, the ground for some distance from Buffalo Bay to the west, for either of these routes, is level and boggy, with

a slight run of water to the Bay. With the improved modern appliances for opening drains in such a soil as ours, and with the generally level character of the country and the absence of rock and rapids in the stream, the promoters of this scheme claim that a canal to the Red River, of a depth of six feet, can be opened at an exceedingly small cost. The fall to be overcome between the Lake of the Woods and the Red River at Winnipeg is at the same time quite a considerable one,—about two hundred and ninety feet in a hundred miles.

Whether it is really feasible, at a reasonable cost, to open a channel by either of such routes is not, however, a question that can yet be answered. No one has the information on which a safe judgment can be formed. But it is at least a question upon which it would be well for the authorities to obtain definite information by a proper survey. There is no question with any of us as to the advantage this country would derive could such a channel be opened. Once at the waters of the Lake of the Woods, we have open navigation for over one hundred and ten miles, to Fort Francis, on the boundary line between Ontario and Minnesota.

Assuming that a water channel by way of the route mentioned would be feasible, there would still remain the problem of reaching Lake Superior from the head of the Rainy River. But let us suppose that the Lake could not be reached from this point by water. Would not the connecting of the Red River with the Lake of the Woods and the Rainy River by water be in itself of tremendous advantage to Manitoba? Surely, of this there can be no doubt. If we can but reach out to those waters, we get into the richest timber country on the continent; and on the Red River will the mills be erected, where the timber will be cut, instead of being hauled to Rat Portage. A saving of the haul by rail from Rat Portage to the Red River will be, indeed, a great boon, not only to Winnipeg, but to the whole Province. We have a prospect of a supply of coal in the same district, which would also be of immense value to us. Between the Red River and the Lake of the Woods, too, Manitoba has a vast tract of unoccupied territory at present practically useless, except as to a small fringe on the west side. The land in this district, under the settlement with the Dominion Government, would nearly all come to the Province as swamp lands. Who can estimate the value to this Province of a reclamation of these lands, which would to a large degree be effected by the opening of such a channel through our own territory? Who can estimate the benefit, to Winnipeg

especially, of opening up this country and making the entire district down to Rainy River tributary to its trade?

Then, even if we cannot reach Lake Superior by water from that point, is there any doubt that there will, in a very short time, be a line of rail from Duluth to Rainy River? The activity that prevails even now on the American side of that river is a sufficient guarantee that such a line will soon be built. Already the rails are laid for, I believe, the greater part of the distance to the mining country around Vermillion Lake, and if we cannot get by water to Lake Superior we shall at least have rail to Duluth, and to obtain access even by rail to that port in competition with our existing lines would be worth a great deal to Manitoba.

Assuming, however, that we shall find means of opening a water route to the Lake of the Woods, I have hope that means will somehow be found of reaching Lake Superior without a transfer to rail cars. The late Alexander McKenzie, in his scheme of steam communication with Manitoba, pending the completion of the Canadian Pacific Road, proposed to utilize the "water stretches," as he termed them, between Lake Superior and the Lake of the Woods. By constructing the Fort Francis locks at the head of Rainy River, which were nearly completed, communication by boat with Rainy Lake is opened, and from there to within a distance of about forty miles of Fort William there is almost a continuous water route, a number of portages, not exceeding in all eight miles, intervening. I know not whether any estimate has been made of the probable cost of overcoming these. The character of the country, as evidently appears from the many reports we have upon it, is such, doubtless, as to involve very heavy rock cutting and a large expenditure, especially from the height of land to Lake Superior. Another route that has been suggested from Rainy Lake to Superior is by the chain of lakes and rivers that run along the international boundary, ending in the Pigeon River valley. The character of the country is said to be much the same as on the more northerly route. Still another route spoken of is from the Rainy River or Lake to Duluth, by way of the valley of the stream that runs north from the height of land around Vermillion Lake, and thence reaching the waters of the stream that flows through the valley of St. Louis to Duluth. Again it is likely the character of the work would be exceedingly heavy. Of the feasibility of any such schemes I do not understand that much is known. I have never heard that any survey of any of them, with a view to such a proposal, has ever been made. But I repeat that, with a channel once open connecting the

Red River and all its tributaries with the Lake of the Woods, the question of completing the scheme by a waterway to Lake Superior, be the cost what it may, would deserve, and receive, consideration. It would then become a question of so much importance, both to the United States and Canada, that a solution would in some way probably be found. In the words of Sir William Van Horne, "It should be provided at any cost." At the most, it would never, I am confident, begin to equal the cost of constructing the Welland canal. And yet the traffic which it would receive and the interests which it would accommodate, even to-day, immeasurably exceed in extent and importance those that the Welland canal were intended to serve when the late Hon. William H. Merritt led in the agitation that secured its construction. And who will venture to estimate the extent of the traffic of the Northwest in a very few years, if a water route to the lakes were opened? The very commencement of opening such a channel, with an assured prospect of success within a reasonable time, would give a marked impetus to immigration,—more, in fact, than all the money we ever spent for the purpose. It would give an impetus to production and to every kind of enterprise in this country that the most sanguine never dreamed of.

We have been for years most earnest believers in a route by Hudson's Bay, and we have been hoping against hope that a line of rails would give us access to its waters. I just wish to suggest one advantage, amongst others, in the route by the lakes. We have already a perfect knowledge of that route. We know how long it is open in the year, and we know that on the lakes there are to-day, besides hundreds of smaller craft, a business fleet of at least two thousand five hundred ships competing for the traffic. And there is local traffic all the way to the sea that stimulates competition. If we even reach the Hudson Bay, whether it be by rail or canal, we cannot have this advantage, at least for many years to come.

Another consideration affecting the question—not exactly indicating an advantage in the lake route in itself, but, withal, a very important circumstance—is that, in improving the lake and St. Lawrence route and in seeking to connect the prairie country with it, we will be working in unison with the eastern part of the Dominion,—the part which controls the strings of the public purse. The St. Lawrence and lake route is one that the country, as a whole, is interested in maintaining; and the East is interested in bringing the trade of the great Northwest by that way. In saying this, I do not seek to detract from the merits that the Hudson Bay route may possess. Confessedly, however, we have not the knowledge of it yet that we have

of the other, or that makes its success a certainty; and I do not hesitate to say that, in my own judgment, there seems a surer opening for us in the direction of the lakes. And not the least important consideration favoring this route is the fact that it is an international one.

Had one the time to refer to it, and had you the patience to listen, it would be interesting also to refer to other and great possibilities in connection with our waterways in this Northwest. If we had a channel to connect our Red River with the lakes, who will put a limit to the possibilities in the way of extending the system to the west and north-west, by the Assiniboine and its branches, and by our own north-western lakes? There was a time when the waters of a great portion of the far north-west came down into the valley of the Red River. To bring some of them in the same direction again would involve, we are assured, but little expense. The question of a canal from Lake Manitoba to the Assiniboine is by no means a new one. For the past twenty years official surveys have been made, and reports published from time to time, showing the small cost of connecting these waters by a channel to the Assiniboine at or near Reaburn. Colonel Seoble, after a careful estimate—based, doubtless, on accurate information—put it as low as \$300,000. Lake Winnipegosis is about nineteen feet higher than Lake Manitoba. Its waters reach those of Lake Manitoba by a circuitous course, and both have an outlet through a rapid stream, with a fall of over eighty feet, into Lake Winnipeg. The surveys show that at Meadow Portage there is but a strip of about a mile and a-half wide between Lakes Manitoba and Winnipegosis, and by a little cut in this and the opening of the canal to the Assiniboine already referred to, the surplus waters of these two great lakes, and of all of their tributaries, could be brought down into the Assiniboine and Red Rivers. To connect the head waters of Winnipegosis, again, with Cedar Lake simply means to cut a channel in a strip of land about four miles in width, lying between the two, at Mossy Portage, the waters on both sides being at practically the same level. Cedar Lake is on the Great Saskatchewan River, that pours its waters into Lake Winnipeg. All this, and the effect of tapping the Saskatchewan by the means suggested, has been pointed out frequently, during the last twenty years, in the official reports, but hitherto no attempt has been made to take advantage of it. The people of Winnipeg have not realised that, by the expenditure of a very small sum, navigation can be opened for hundreds of miles to the north-west, bringing the entire region that is tributary to these

lakes, as well as the upper Saskatchewan, within steamboat communication with that city. It would give access to the rich salt deposits of the Winnipegosis, to the valuable timber districts in that direction, and to the rich lands of the district around Lake Dauphin, which is connected by a considerable stream with the waters of Winnipegosis. How far the great volume of water that would thus be brought into the Red River would of itself settle the problem of the St. Andrew's rapids it is not for me to offer an opinion. Manifestly it would at least reduce the needed expenditure on that work to a minimum.

It might provoke a smile were I to suggest that, at no very heavy cost—heavy, I mean, as compared with the vast amounts put into many of our Canadian public works—water communication, with a depth sufficient to secure navigation, can be maintained along the Assiniboine River, past this City of Brandon, and to its upper waters, and along the valley of the Qu'Appelle to connect with the South Saskatchewan at the elbow of that river. I am not here to recommend such a scheme as one at present to be advocated by this Institute, for, personally, I know nothing as to its feasibility. There is enough of an immediately practical character to take up the time and attention of the Farmers' Institute, without advocating all the possible schemes that the future may develop. It is interesting, at the same time, to know that men of engineering skill and experience have studied the question, and have declared that it is perfectly feasible, and at a surprisingly small cost. The head of the Qu'Appelle valley is within a few miles of the South Saskatchewan. The two valleys, in fact, connect, but there is a very considerable elevation at the head of the Qu'Appelle by which the waters of the Saskatchewan are prevented from coming into it, although there is little doubt that, at an earlier period, the waters of the South Saskatchewan flowed into the Qu'Appelle. More than ten years ago, Mr. D. A. Keizer, a civil engineer residing in Winnipeg, went carefully and minutely into the whole question, made a profile of the whole route showing the elevations, and elaborated a scheme for the entire enterprise. I mention this simply to show that there are great possibilities in the future, in connection with these waterways, of which we little dream. And though we are not here to-night advocating the taking of any steps to promote any scheme that is not at present practicable, yet we may be permitted to look forward to the day when much that now seems almost chimerical will become practical problems. And the possibility of such extensions of our water commu-

nitions as are suggested by men like engineers Scoble, Ruttan and Keizer, even if we should call them enthusiasts, should stimulate us to the improvement of these communications in every direction in which it has been proved to be practicable.

In the mean time, there is something of a very practical character for us here to do, in the direction of forwarding the improvement of the water system, so as to bring immediate benefit. We should be ever and constantly pressing upon the authorities the need of a speedy completion of the fourteen foot channel to Montreal, looking at the past, it may be feared that unless pressure is brought to bear, its completion may be delayed even beyond 1897. We should, I think, endeavor, too, to lead public opinion to the advisability of seeking the co-operation of our republican neighbors in deepening the channel in the near future to twenty feet right through to the sea, placing the entire work under the charge of an International Commission.

There is one more suggestion of a practical character that I desire to offer. Some months ago, the First Minister at Ottawa sent two of his colleagues to this Northwest to study the wants and needs of the country and its settlers. Perhaps the means used to get at what they wanted may not have been invariably the best. At all events, the members of this Institute are free to express themselves frankly and to indicate what their grievances are. And on the transportation question I am sure you have but one opinion. Now, we see it announced that the Premier is about to issue a Commission to enquire into this very question of transportation. I suppose it will include also an enquiry into the means that may be open to obtain relief. Would it not be at once wise and opportune to ask of the Federal Powers that, in connection with this enquiry, they should have a careful survey made of the country between the Red River and the Lake of the Woods, with a view to considering the feasibility of a canal route and the probable cost of such an enterprise? Having taken the best of our lands and resources wherewith to construct a line of railway to the Pacific, which, in reaching that distant coast at all events, serves Federal and Imperial rather than local purposes, and having subjected us to the burden of the present rates, we surely have a claim to consideration to the extent of making full enquiry as to the feasibility of a water route. Surely there is the more justification for the demand when we reflect that the object of it would be to facilitate trade between the East and West of our own Dominion. Once more I remark that our

American neighbors are on the move to establish water communication with the lakes. Even as I write these lines, I read that in Washington, Congress is likely in a few days to pass an appropriation for a survey of a channel from the head waters of the Mississippi to Lake Superior. Again our neighbors bid fair to get ahead of us, and in a few years we may see the cities of St. Paul and Minneapolis and the great American northwest enjoying the advantage of direct water communication to the sea. Canada, on the other hand will be left to glory in having spent nigh one hundred and fifty millions in gold and lands to construct a railway whose main line is now in the United States, contributing to the building of these same American cities and that same American northwest. And, in the mean time, we are keeping on right in the same line, paying to lines of vessels on the Atlantic and Pacific subsidies that are equal to the interest on nearly thirty millions of dollars.

Surely the time is opportune to urge on the Federal Powers that they should at least make a survey of our country to test the feasibility of a channel by the Lake of the Woods when we know that the character of the country is at least much more favorable to the construction of such a work. I venture, therefore, to suggest that at this meeting of your Institute it would be wise to take action in the way of memorialising the Government of the Dominion on the question.

